Honeywell

R7184 Series Primary Controls

TECHNICIAN'S QUICK REFERENCE GUIDE

The following service procedures will help you become familiar with the R7184 series primary controls. For control operation, please refer to the basic control functions described on the back. For further information, wiring instructions and troubleshooting, please refer to the R7184 Installation Instructions, form number 69-1233.

Priming the Pump

1. Initiate a call for heat.
2. While the ignition is on, press and release the reset button (hold 1/2 second or less). If the control has not locked out since its most recent complete heat cycle, the lockout time will be extended to 4 minutes (45 seconds in earlier units), and the ignition will remain on for the entire heat cycle.
3. Bleed the pump until all froth and bubbles are purged. If prime is not established within the extended lockout time, the control will lockout. Press the reset button to reset the control and return to step 2.

NOTE: The reset button can be held for 30 seconds at any time to reset the control's lockout counter to zero and send the control to standby.

4. Repeat steps 2 and 3, if needed, until the pump is fully primed and the oil is free of bubbles. Then terminate the call for heat, and the control will resume normal operation.

Resetting From Restricted Lockout

If the control locks out three times in a row without a complete heat cycle between attempts, the lockout becomes restricted in order to prevent repetitious resetting by the homeowner. To reset, hold down the reset button for 30 seconds (until the LED flashes twice).

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Disable Function

Any time the motor is running, press and hold the reset button to disable the burner. The burner will remain off as long as the button is held and will return to standby when released.

Table 1. LED Indicator Key.

LED	Status
On	Flame sensed.
Off	Flame not sensed.
Flashing (1/2 sec. on, 1/2 sec. off).	Lockout/Restricted Lockout.
Flashing (2 sec. on, 2 sec. off)	Recycle.

Cad Cell Resistance Check

While the burner is firing, and after the ignition has been turned off, press and release the reset button (hold 1/2 second or less) to check the cad cell resistance. The LED will flash 1 to 4 times, depending on the cad cell resistance (see Table 2). For proper operation, it is important that the cad cell resistance is below 1600 ohms.

Table 2. Cad Cell Resistance.

LED Flashes	Cad Cell Resistance (ohms)
1	0—400
2	400—800
3	800—1600
4	Š1600

Table 3. R7184 Series Control Features.

Model	Advanced Features
R7184A	Interrupted ignition microprocessor-based control.
R7184B	All features of the R7184A plus a 15-second valve-on delay.
R7184P[a]	All features of the R7184B plus a burner-off delay: field-selectable 1/2, 2, 4 or 8 minutes.
R7184P/ R7184U	All features of the R7184P above, plus dry alarm contact terminals (30 Vac, 2A maximum). All delays can be field disabled together by a DIP switch setting.

[a] Burner-off delay timings may be different.

Typical Sequence of Operation (Fig. 1).

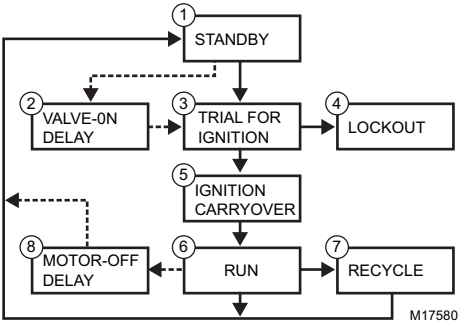

Fig. 1. Typical sequence of operation.

1. **STANDBY.** The burner is idle, waiting for a call for heat. When a call for heat is initiated there is a 2- to 6-second delay while the control performs a safe start check.
2. **VALVE-ON DELAY.** As applicable, the ignition and motor are turned on for a 15-second valve-on delay.
3. **TRIAL FOR IGNITION (TFI).** The fuel valve is opened, as applicable. A flame should be established within the 15-, 30-, or 45-second lockout time.
4. **LOCKOUT.** If flame is not sensed by the end of the TFI, the control shuts down on safety lockout and must be manually reset. If the control locks out three times in a row, the control enters restricted lockout. Follow the instructions on the front of this card to reset the control.
5. **IGNITION CARRYOVER.** Once flame is established, the ignition remains on for 10 seconds to ensure flame stability. It then turns off.
6. **RUN.** The burner runs until the call for heat is satisfied. The burner is then sent to burner motor-off delay, as applicable, or it is shut down and sent to standby.
7. **RECYCLE.** If the flame is lost while the burner is firing, the control shuts down the burner, enters a 60-second recycle delay, and then repeats the ignition steps outlined above. If the flame is lost three times in a row, the control locks out to prevent cycling with repetitious flame loss caused by poor combustion.
8. **BURNER MOTOR-OFF DELAY.** If applicable the fuel valve is closed and the burner motor is kept on for the selected burner motor-off delay time before the control returns the burner to standby.

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